

In re Appln. of: James J. Barnat et al.  
Application No.: 09/873,800

In response, claims 26-37 have been canceled without prejudice to address the restriction requirement. Claim 60 have been amended and claims 71 and 72 have been added. Claims 1-25 and 38-72 remain in this patent application. A § 132 declaration is presented herewith to address the substantial technical differences between dressed aggregate paving applications and undressed aggregate chipsealing applications and to further support the argument below and evidence why there is no teaching to combine the cited art. Applicant respectfully requests reexamination and reconsideration of the claims in view of the foregoing amendments and the following remarks.

As a preliminary matter, claim 60 has been amended to address the Section 112 rejections in paragraph 2 of the Office Action. Specifically, the phrase output hopper has been deleted from claim 60 and replaced with "discharge port" to make claim 60 more generic and not limited to specific input and output hoppers. This answers the Patent Examiner's question at the end of paragraph 2 of the Office Action.

Turning to the more substantive merits of the application, claims 1-17, 21, 23-25, 38-46, and 60-67 have been rejected as either anticipated or obvious over Bense et al. Claims 47-51, 53 and 55 have been rejected as obvious over O'Brien et al. in view of Kilheffer et al. These rejections will be addressed below primarily with reference to the independent claims, because if these claims are allowable then the remaining dependent claims are allowable for at least the same reasons.

#### **I. INDEPENDENT CLAIMS 1 AND 60**

Claims 1 and 60 were rejected as anticipated by Bense et al. The rejection is respectfully traversed. An anticipation rejection is appropriate only if each and every limitation and element is met in the cited prior art reference. MPEP § 2131.

In the Office Action the Patent Examiner has specifically and repeatedly asserted that structure 35 of Bense et al. is the "output hopper" that contains the claimed discharge port. Office Action, page 4. However, structure 35 is not an output hopper but is expressly disclosed as a "mixer 35". Col. 5, Ins. 41-46. According to the explicit teaching of Bense et al.:

**"The emulsion contained in the second reservoir is adapted to be fed into the mixer 35. The mixer 35 then mixes the loose chips coming from the storage hopper 20 with the pulverulent material coming from the hopper 36**

and the bituminous emulsion conveyed to the mixer from one of the reservoirs 43 and 44." (emphasis added). Col. 5, lns. 41-46.

Thus, Bense et al. explicitly teaches the direct opposite of the claimed invention. In particular, Bense et al. requires premixing aggregate and asphalt binder prior to discharge. In contrast, Claims 1 and 60 both recite "an asphalt binder material dispensing system **separate** [ ] from the aggregate material system such that asphalt binder material and aggregate material **are not mixed** prior to aggregate material being dispensed through the discharge port" (emphasis added). The "mixer 35" of Bense et al. clearly integrates the aggregate and binder dispensing systems and does not provide for the "separate" dispensing systems as recited in the claims.

## **II. DEPENDENT CLAIMS 71 AND 72**

In addition, claims 71 and 72 have been added to provide claims that even further define the present invention over Bense et. al. Claims 71 and 72 (which contain the base limitations of claim 1 and 60 respectively) recite:

" wherein the roadway paving apparatus is free of spreading apparatus<sup>1</sup> behind the discharge port."

These limitations make even clearer that mixed aggregate material and/or mixing of aggregate and binder does not occur inside vehicle. In chipsealing applications involving "undressed aggregates" it is undesirable to have such spreading apparatus as finishing tables and aggregate spreaders as separate binder and aggregate materials uniformly discharged and do not need spreading. See O'Brien § Aff., ¶ 9. However, in dressed aggregate applications such as disclosed in Bense et al, the finishing table 42 and aggregate spreader 41 are desirable and necessary in order to evenly spread the stiff dressed binder material piles that has been dropped over the roadway surface. See O'Brien § Aff., ¶ 9. Thus, Claims 71 and 72 now recite a limitation that is directly against the express teachings and requirements of Bense et al. For these additional reasons, Claims 71 and 72 are patentable over Bense et al.

## **III. INDEPENDENT CLAIMS 15 AND 38**

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<sup>1</sup> For the record, spreading apparatus does not include rollers or roller vehicles that sometimes following a chipsealing operation to compact and press aggregate chips into the binder material across the roadway surface.

Independent claims 15 and 38 were rejected as anticipated by Bense et al. The rejection is respectfully traversed. Independent claims 15 and 38 both recite:

"preventing intermixing of asphalt binder material and aggregate material prior to discharging of aggregate material and spraying of asphalt binder material" (emphasis added)

Claims 15 and 38 clearly set up a specific order of operation with the "prior to" language in the above clause. The claims when read as a whole make clear that the invention is directed at chipsealing operations, not dressed aggregate applications where aggregate and binder are mixed inside the vehicle (e.g. via mixer 35 of Bense et al.) or premixed upstream of the vehicle.

Because Bense et al. expressly discloses and teaches intermixing of asphalt binder material and aggregate material prior to discharge and in fact inside the vehicle, it clearly does not "prevent" such intermixing as claimed. Because, the teachings of Bense et al. are directly opposite the claimed invention, Applicant respectfully request the Patent Examiner to withdraw the rejections of claims 15 and 38 based on Bense et. al (and also the rejections of the dependent claims based thereon).

#### **IV. INDEPENDENT CLAIM 47**

Claim 47 was rejected under 35 U.S.C. § 103(a) as being obvious over O'Brien et al. (U.S. Patent No. 5,895,173). The rejection is respectfully traversed.

Claim 47 is directed toward a system for accomplishing a continuous process and the Patent Examiner appears to readily recognize this fact. Applicant also notes that claim 47 is also directed toward a chipsealing process. For example, claim 47 recites:

"the asphalt binder material dispensing system being separate from the aggregate material system such that binder material and aggregate material are not mixed prior to aggregate material being dispensed."

The combination of these claimed features are believed to make Claim 47 patentable over the prior art. In particular, the conventional non-continuous chipsealing system of the prior art has caused problems in that bumps are created when the process is repeatedly started at stopped for refill. (See problem with conventional commercial chipsealing operations discussed in background of Applicant's disclosure at pg. 1, ¶ 5).

It is acknowledged that O'Brien is directed toward a chipsealing system. However, O'Brien does not teach or suggest a continuous system as is claimed. The Patent Examiner's reliance on Col. 4, lns. 55-63 has nothing to do with a continuous process. The reference to a "conveyor system" has to do with transferring a single supply, not linking more than one supply truck to the spreader on the go without stopping to provide a continuous system.

The Patent Examiner asserts that Kilheffer et al. teaches sufficient holding capacity and continuous process. However, there is no teaching or suggestion to combine O'Brien and Kilheffer et al.. When considering obviousness rejections, "the claimed invention as a whole must be considered" and also "a prior art reference be considered in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention. MPEP § 2141.02 citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983) cert. denied U.S. 851 (1984). Here, as demonstrated by the enclosed §132 affidavit of Mr. Pat O'Brien, the operational principles and issues posed by chipsealing and dressed aggregate paving processes are so different that one of ordinary skill in the art would not look to the other for teachings.

In particular, prior paving machine designs for dressed aggregate applications (in which binder/oil is already mixed with aggregates) evolve around considerations for handling the dressed aggregate. For example, the following list highlights some of the significant differences in design considerations between dressed aggregate applications and chipsealing applications typical in the prior art:

1. There are three different materials typically used in dressed aggregate applications including large rock material, small rock material (e.g. sand) and oil binder. In contrast, chipsealing typically only uses two materials including a binder material and a single aggregate material. O'Brien §132 Affidavit, ¶ 7.
2. In dressed aggregate applications, the more dressed aggregate is conveyed, the more likely the big rock and little rock are likely to segregate, and thereby create an uneven surface. In chipsealing operations, uniformity or spraying and chipspreading is the key to achieving a uniform surface result. O'Brien §132 Affidavit, ¶ 8.
3. Dressed aggregate applications dump stiff aggregate upon the ground as the binder material is already mixed with the aggregate materials prior to discharge. This requires spreaders and evening out devices. In contrast, chipsealing involves free flowing aggregate which is controllably dumped about 1 stone thick over the surface. O'Brien §132 Affidavit, ¶ 9.
4. Chipsealing operations operate at an average speed of about 3 times as fast as dressed aggregate applications. As a result, refilling in chipsealing applications is typically accomplished while the vehicles are stopped. O'Brien §132 Affidavit, ¶ 6.

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(Keeping in mind that there is no need to spread stiff binder/aggregate material with finishing tables or spreader/grader paper in chipsealing. O'Brien §132 Affidavit, ¶ 9).

Based on the foregoing, it should be clear that the design considerations going into dressed aggregate pavers is completely different than chipsealing designs. Due to the significantly different problems and operational parameters involved, one skilled in the art would not reasonably look to dressed aggregate machine applications for teachings when trying to design a chipsealing machine.

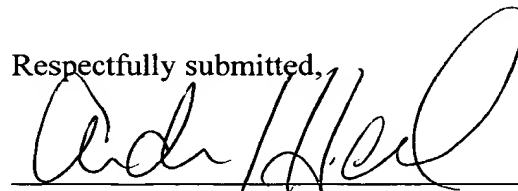
Further, Kilheffer et al. expressly acknowledges that it is directed toward pavers where onboard mixing exists. Col. 3, lns. 25-45. Kilheffer goes into detail about the various onboard mixing applications to which its teachings pertain. Notably, there is no mention or suggestion of any chipsealing processes. Thus, Kilheffer et al. implicitly recognizes that its teachings would not extend to substantially different processes such as chipsealing, the subject of the present invention.

When considering the teachings of the prior art and when considering the claimed invention of Claim 47 as a whole, it is submitted that Claim 47 patentably defines over the prior art of record. Applicant therefore respectfully requests the Patent Examiner to withdraw the prior art rejections of Claim 47 and its dependent claims.

#### CONCLUSION

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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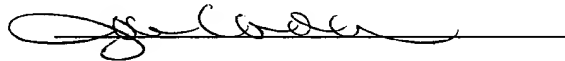
Date: November 12, 2002

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CERTIFICATE OF MAILING

I hereby certify that this RESPONSE TO OFFICE ACTION (along with any documents referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class mail in an envelope addressed to: Commissioner for Patents, BOX NON FEE AMENDMENT, Washington, D.C. 20231.

Date: November 12, 2002

A handwritten signature in black ink, appearing to be "J. Barnat", written over a horizontal line.



PATENT  
Attorney Docket No. 501094

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:  
James J. Barnat et al.

Art Unit: 3671

Application No.: 09/873,800

Examiner: Raymond W. Addie

Filed: June 4, 2001

For: ROADWAY PAVING SYSTEM AND  
METHOD INCLUDING ROADWAY  
PAVING VEHICLE SUPPLY TRUCK

**AMENDMENTS TO CLAIMS  
MADE IN RESPONSE TO OFFICE ACTION DATED AUGUST 12, 2002**

Amendments to existing claims:

26. ~~A supply truck, comprising:~~  
    ~~a chassis supported on wheels extending between front and rear ends;~~  
    ~~a supply hopper supported by the chassis having a discharge region at the rear~~  
~~end;~~  
    ~~a conveyor mechanism in the supply hopper adapted to convey aggregate material~~  
~~towards the discharge region;~~  
    ~~a tailgate closing the discharge region of the supply hopper, the tailgate moving~~  
~~rearwardly relative to the chassis to open the discharge region to allow discharge of aggregate~~  
~~material from the rear end of the supply truck;~~  
    ~~a supply tank supported by the chassis carrying liquid material; and~~  
    ~~a transfer conduit carried by the tailgate and connected to the supply tank, the~~  
~~transfer conduit including a hydraulic coupling, the transfer conduit and hydraulic coupling~~  
~~extending rearwardly when the tailgate moves rearwardly.~~

27. ~~The supply truck of claim 26 further comprising:~~  
    ~~a support arm mounted to the tailgate, the support arm supporting the transfer~~  
~~conduit and guiding rearward extension of the transfer conduit and hydraulic coupling.~~

~~28. The supply truck of claim 27 further comprising:~~

~~a control module supported by the support arm and electronically connected to the conveyor mechanism, the control module controlling operation of the conveyor mechanism to control discharge of material from the hopper.~~

~~29. The supply truck of claim 28 wherein the tailgate comprises a pair of doors, the doors being pivotably mounted to the hopper such that the doors pivot horizontally outwardly away from each other to open the discharge region and inwardly toward each other to close the discharge region, the support arm being mounted to one of the doors.~~

~~30. The supply truck of claim 29 wherein the support arm extends diagonally between vertical and horizontal axes and extends vertically above a vertical top edge of the doors, the control module and hydraulic coupling arranged on the support arm such that the control module and hydraulic coupling extend horizontally rearwardly substantially beyond the doors when the doors are open sufficient to avoid interference with material discharged through the discharge region when the conveyor mechanism is operating.~~

~~31. The supply truck of claim 30 further comprising:  
means for securing the transfer conduit to the support arm.~~

~~32. The supply truck of claim 29 further comprising:  
fluid powered cylinders mounted to the hopper controlling the opening and closing of the doors.~~

~~33. The supply truck of claim 26 wherein the supply truck is linked to a roadway paving vehicle, the roadway paving vehicle including an operator station, an asphalt binder material dispensing system and an aggregate material dispensing system, the asphalt binder material dispensing system including an asphalt tank and an input conduit connected to the asphalt tank, the input conduit having a hydraulic coupling at the operator station, the hydraulic coupling of the input conduit connecting to the hydraulic coupling of the transfer conduit.~~

~~34. The supply truck of claim 26 wherein the supply truck includes front wheels and rear wheel sets, the supply tank being mounted beneath the conveyor mechanism and the hopper and between the front wheel set and the rear wheel set, whereby a low center of gravity is provided when the tank is filled with liquid.~~



35. — ~~A supply truck, comprising:~~  
    ~~a chassis supported on front wheels and rear wheel sets, the chassis extending between front and rear ends;~~  
    ~~a supply hopper supported by the chassis having a discharge region at the rear end;~~  
    ~~a conveyor mechanism in the supply hopper adapted to convey aggregate material toward the discharge region;~~  
    ~~a tailgate closing the discharge region of the supply hopper, the tailgate moving rearwardly relative to the chassis to open the discharge region to allow discharge of aggregate material from the rear end of the supply truck;~~  
    ~~a supply tank carrying asphalt binder material, the supply tank being disposed beneath the conveyor mechanism and the hopper and between the front wheel set and the rear wheel set, whereby a low center of gravity is provided when the tank is filled with liquid; and~~  
    ~~a transfer conduit connected to the supply tank, the transfer conduit including a hydraulic coupling.~~

36. — ~~The supply truck of claim 35 wherein the transfer conduit extends rearwardly toward the rear end supported by the supply hopper.~~

37. — ~~The supply truck of claim 35 wherein the supply tank includes a top end mounted to the chassis.~~

60. (First Amended) A roadway paving apparatus for applying asphalt binder material and aggregate material to a ground surface, comprising:

    a vehicle having an engine and wheels, the vehicle having opposed front and rear ends;

    an aggregate material dispensing system carried by the vehicle adapted to hold a supply of aggregate material and having a discharge port proximate the rear end of the vehicle behind the wheels, the discharge port adapted to discharge aggregate material over the ground surface, the aggregate material dispensing system including a conveyor mechanism extending substantially between the front and rear ends for transporting aggregate material rearwardly toward the discharge port;

    an asphalt binder material dispensing system carried by the vehicle separate from the aggregate material system such that asphalt binder material and aggregate material are not mixed prior to aggregate material being dispensed through the discharge port, the asphalt binder material dispensing system adapted to hold a supply of asphalt binder material, the

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asphalt binder material dispensing system including a sprayer having a spray bar with a plurality of nozzles, the spray bar adapted to spray asphalt binder material through the nozzles behind the wheels; and

wherein all of the wheels roll on the ground surface between the spray bar and the front end such that no wheels roll over asphalt binder material and aggregate material that are discharged by the spray bar and through the ~~output hopper~~ discharge port.